

**Contractor's Progress Report
(Technical and Financial)
CDRL A001**

For: Safe Surgery Trainer

Prime Contract: N00014-14-C-0066

**For the Period September 1, 2014 to September 30,
2014**

Submitted: 15 October 2014

**Prepared for:
Office of Naval Research (ONR)
875 N. Randolph Street
Arlington, VA 22203-1995**

**Prepared by:
Alion Science and Technology Corporation
5365 Robin Hood Road, Suite 500
Norfolk, VA 23513**

**Contract Program Manager
Curtiss Murphy
(757) 857-5670, Ext. 308
(757) 857-6781 (fax)
cmurphy@alionscience.com**

**Contract Administrator
Kimberly Thompson
(757) 857-5670, Ext. 366
(757) 857- 6781 (fax)
kthompson@alionscience.com**

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 15 OCT 2014		2. REPORT TYPE		3. DATES COVERED 01-09-2014 to 30-09-2014	
4. TITLE AND SUBTITLE Safe Surgery Trainer				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Alion Science and Technology Corporation,,5365 Robin Hood Road, Suite 500,,Norfolk,,VA,23513				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 5	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Medical Modeling - Safe Surgery Trainer

This Monthly Progress Report is provided in accordance with the contract CDRL.

1) Contract Period of Performance: 12 March, 2014 to 30 September, 2015

2) Cost (Estimated financials may differ from actual invoice)

a) Total Amount Funded to date:	\$910,256.00
b) Estimated Reporting Period Expenditures	\$40,805.65
c) Estimated Cumulative Expenditure	\$269,667.33
d) Estimated Remaining Funds To Completion	\$640,588.67

3) Progress and Accomplishments During Report Period

- a) Program Management – Ongoing communication and project management with project team and sub-contractors. Ongoing outreach with medical centers (see below). Ongoing project management according to Alion's CMMI Level 3 processes.
 - i) Briefed Capt Smith, the new Deputy Commander of Naval Portsmouth Hospital. Began coordinating technology transfer and surgical visitation to Portsmouth.
 - ii) Ongoing interactions with medical representatives that were interested in or attended the SST StoryJam. StoryJam Participating organizations included: Portsmouth Naval Hospital, Langley AFB Hospital, Fort Eustis McDonald Healthcare, Eastern Virginia Medical School, Maryview Hospital, Mary Immaculate Hospital, and the Children's Hospital of the King's Daughters.
 - iii) Continued outreach to the VA, Navy, Army, Airforce, and civilian healthcare organizations to encourage participation and alignment.
- b) Prototype Development – Significant development of SST software. After meeting the Sept 15th iteration, the team ramped intensity up in order to meet I/ITSEC iteration one deadline. The team is now working on a one week or two-week iterations, with weekly web meetings with both the art and design teams. Integrated initial avatars and environmental art. Worked extensively on the user interface and communication mechanic. Refined comic-book art style and color palette.
- c) Instructional Design and Healthcare Research – Continued development of scenarios involving detailed timelines, character interaction, and plot chronology. Developed conversations for the scenario. Refined the terminal and enabling Learning Objectives (see below). Reviewed research and videos. Contributed to the design of gameplay and scenarios to match learning objectives.

- i) Learning Objectives: 1) Conduct a Basic Time Out; 2) Use Check-Back (i.e. closed-loop communication); 3) Introduce Your Name and Role in the OR; 4) Facilitate Safe Communication
- d) Research Studies – Created/refined measurement outlines for usability studies, evaluation study, closed loop communication, and timeout. Continued plans for IRB approval and shifted IRB date to November or December for May testing. Participated in design and development discussions to ensure research and development goals are aligned.

4) Work in Progress / Plans for Next Month

- a) Program Management - Continue identifying communication channels, managing contracts, and coordinating with team members and outside participants. Continue involving team members and stakeholders in design, testing, and development.
- b) Prototype Development – Continue developing SST software, game-flow, and mechanics. Continue developing art assets including 2D, 3D environmental, and character avatars. Continue building core infrastructure, user-interface, and scenario tools.
- c) Instructional Design and Healthcare Research – Continue developing/refining target scenarios and conversations. Formalize/refine the scenario's characters, backstory, and scenario conversations. Formalize/refine the Learning Objectives.
- d) Research Studies – Integrate refined learning objectives into measurement outlines. Update IRB submissions, edit usability game play study, and update I/ITSEC IRB. Provide case vignettes and analysis for psychological safety. Coordinate with Portsmouth Naval regarding IRB. Continue participation in discussions to ensure design, development, and research goals are in alignment.

5) Milestones / Deliverables

Name/Description	Date (Target or Actual)	Notes/Status
Project Management Plan	DONE: May 28, 2014	COMPLETE
Reports	15 th of each month	This document
Presentation Materials	As appropriate	ONR Kickoff Brief
Software Requirements Document	Target: Nov 30, 2014	
Scenario Design Document	Target: Sept 30, 2014 & June 30, 2015	
Prototype - Executable	Target: December, 2014, May, 2015, and Aug, 2015	
Prototype - Source	Target: Sept 30, 2015	
Research Data	Target: Sept 30, 2015	
Final Report	Target: Sept 30, 2015	
Milestone – Initiation	DONE: May 31, 2014	COMPLETE
Milestone – Iteration 1	Target: Dec 1, 2014	
Milestone – Iteration 2	Target: Apr 30, 2015	

Milestone – Iteration 3	Target: July 31, 2015	
Milestone – Conclusion	Target: Sept 30, 2015	
Milestone – ONR Kickoff	DONE: Apr 22, 2014	COMPLETE
Milestone – StoryJam	DONE: May 25, 2014	COMPLETE

6) Risks/Issues/Concerns/Problems

- a) Risk – Portsmouth Leadership Change. When first briefed, Capt Jim Hancock, the Deputy Commander of Portsmouth Naval Hospital gave his full support: “I’m all in.” Over the summer, Capt Hancock was tapped for Fleet Forces Surgeon, and we briefed the new Deputy Commander, Capt Branford Smith, on 9/5/14. Capt Smith reflected that SST “has the potential to be a great tool in moving our patient safety culture forward” and also expressed: “it makes sense to involve our higher echelons to be sure we leverage this endeavor to the maximum extent possible”. We are actively engaging with Capt Smith to mitigate any risk to Portsmouth’s ongoing involvement with the backup plan to use Langley. We have also connected Capt Smith with Dr Ray Perez to help answer questions.
- i) Updated - this risk appears to be mostly resolved. Portsmouth has engaged ONR and we are working to develop a transition document to submit to Portsmouth. Portsmouth invited Curtiss Murphy to observe and record a Lap Salpingo Oophorectomy on October 3rd, 2014. Will continue to engage closely with Portsmouth to ensure proper transition.

7) Travel Accomplished

- a) None this period.

8) Planned Travel

- a) None this period.

9) Related Activities

- a) Submitted abstract for International Modelling and Simulation in Healthcare (IMSH) 2015 conference, New Orleans, Louisiana, Jan 10-14, 2015.
- b) Presented SST concepts in a brief at the M&S Southwest Modeling and Simulation Conference in Scottsdale, Arizona, Mar 12, 2014.